

Monthly Activity Report

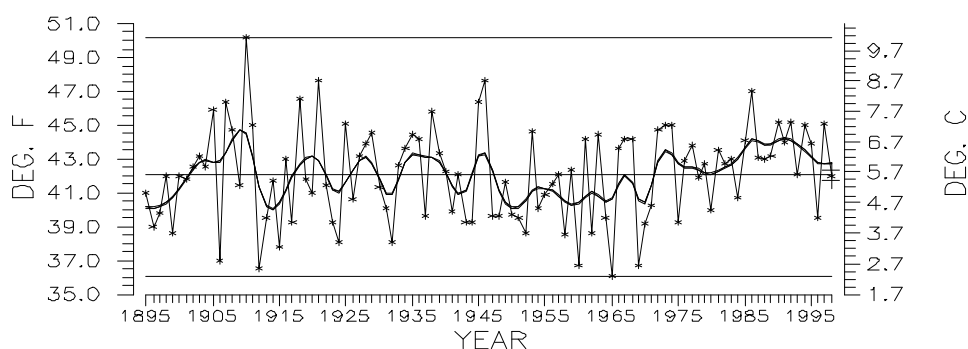
March 1998

National Climatic Data Center

A National Resource for Climate Information



U.S. NATIONAL TEMPERATURE
MARCH, 1895-1998



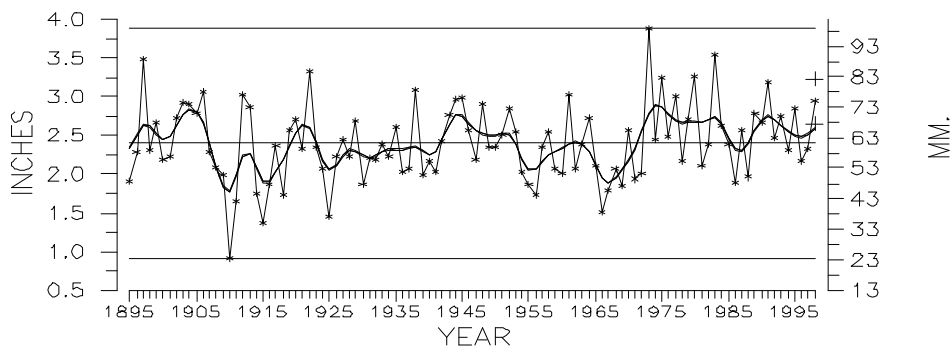
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MAXIMUM VALUE (TOP),
LONG-TERM AVERAGE (MIDDLE),
MINIMUM VALUE (BOTTOM)

THICK SMOOTH CURVE
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CONFIDENCE INTERVAL
FOR CURRENT YEAR IS
INDICATED BY '+'.
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National Climatic Data Center, NOAA

U.S. NATIONAL PRECIPITATION
MARCH, 1895-1998



STRAIGHT HORIZONTAL LINES ARE
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National Climatic Data Center, NOAA

Preliminary data for March 1998 indicate that temperature averaged across the contiguous United States was at the long-term mean ranking as the 48th coolest such month since 1895. Only one percent of the country was much warmer than normal, while none of the country was much cooler than normal.

Preliminary precipitation data indicate that March 1998 was the 15th wettest such month, for the nation overall, since 1895. Over 18 percent of the country was much wetter than normal while about one percent was much drier than normal.

DIRECTOR'S HIGHLIGHTS

NCDC Information Provided for the Vice President

The National Climatic Data Center (NCDC) provided an informational package to the Interagency Environmental Technology Office regarding weather extremes in the northeast U.S. The Technology Office requested the information for a briefing with Vice President Gore. The package included El Niño information, the Climate Variations Bulletin, the Billion Dollar Weather Disasters report, and NCDC's on-line report on the eastern U.S. flooding and ice storm of January 1998.

Document Management System Enhancements

Hyland Software installed a new version of their OnBase system at the National Climatic Data Center (NCDC) which, for the first time, allows NCDC to utilize its Hierarchical Data Storage System for the storage of digital images. The Beta test version 3.5 contains several upgrades to the scanning and importing systems in addition to multiple user access improvements. Meanwhile, the scanning of routinely received Cooperative Observer forms has moved into full production.

Monthly Serial Publications Available On-Line

The National Climatic Data Center's (NCDC) monthly serial publications, *Local Climatological Data*, *1997 Annual Local Climatological Data*, *1997 Comparative Climate Data*, *STORM Data*, and *Monthly Climatic Data for the World* are available electronically through the National Climatic Data Center's Home Page: www.ncdc.noaa.gov. Access to these and other publications are the direct results of activities

supported by the National Oceanic and Atmospheric Administration's Virtual Data System (NVDS) *On-Line Data Store* project. The only software required to access these files is Adobe Acrobat Reader which can be obtained free at: <http://www.adobe.com/prodindex/acrobat/readstep.html>.

Regional Climate Center Activities

Three Regional Climate Center (RCC) site visits were conducted in March, including the Midwest, High Plains and Southeast Regional Climate Centers. The Northeast RCC will be visited in mid-April, thus completing this round of six site visits. The funding for the RCCs was released from the National Oceanic and Atmospheric Administration, thus setting in motion the actions necessary to fund the RCCs through the cooperative institute known as CIASTA. To kick off the RCC funding year which begins May 1, 1998, a Directors meeting will be held in Asheville, NC, in early May.

NCDC Participates in Annual Satellite and Education Conference

The National Climatic Data Center (NCDC) participated in Satellite and Education Conference XI in West Chester, PA, held on March 11-13, 1998, at West Chester University. Tom Ross staffed the NCDC exhibit booth and also provided classroom demonstrations of NCDC World Wide Web satellite and climatology pages and CD-ROM products to conference attendees. Over 250 users obtained information about NCDC climate and satellite products. NCDC also provided some climatology and satellite CD-ROMs to teachers for use in their classroom laboratories and projects. There were several other National Oceanic and Atmospheric Administration/ National

Environmental Satellite, Data, and Information Service line offices that also participated in this annual event

March Customer Service Statistics Reflect Emerging Use of NNDC Web Site

The National Climatic Data Center's (NCDC) March 1998 customer service operations continued the expected seasonal growth in customer requests for climate data and information. Statistics for March 1998 indicated a 9 percent increase in data orders, a 16 percent rise in facsimile transmissions to customers, and a 5 percent growth in both telephone calls and letter receipts as compared to February 1998 figures. March annual data sales comparisons demonstrated an 8 percent growth when compared to the March 1997 total. This increase was due in part to both a 25 percent same month annual increase in digital orders for March 1998 and the continuing effect of increased user fees. The new National Oceanic and Atmospheric Administration National Data Center's (NNDC) Online Data Store Web Site was perhaps the most significant factor in March 1998 customer service activities. Most NCDC customer service representatives reported approximately 50 percent of their customer telephone contacts represented requests for assistance with the NNDC Web Site. March 1998 NNDC Web Site statistics reveal that 5,400 unique users visited the site during the month which represents a 63 percent increase from February 1998 totals. These figures will likely continue to grow in the near term as the NCDC plans to add one year of cooperative data to this web site by the end of April of this year.

Vegetation CD

A CD-ROM of the time series of global monthly vegetation cover from the National Oceanic and Atmospheric Administration/Advanced Very High Resolution Radiometer (AVHRR) has been produced by the National Climatic Data Center/CSD-Suitland. This new data set was developed by Garik Gutman, Dan Tarpley and

Aleksandr Ignatov of National Environmental Satellite, Data, and Information Services/Office of Research, and Steve Olson of Research and Data Systems Corporation. In this version (1.0), the Third Generation C-Level Monthly Normalized Difference Vegetation Index (NDVI) data is presented for each month from April 1985 through December 1997 in both image and digital form. Viewing is via web browser or Navroad, an off-line browser included on the CD-ROM.

Web CliServ Named DOC Site of the Week

The National Climatic Data Center's (NCDC) Web Climate Services (CliServ) has been named the Department of Commerce (DOC) Site of the Week for two consecutive weeks, March 9/16. The system is averaging about 1,500 hits per day with some days close to 3,000. Web CliServ allows on-line queries of NCDC's many metadata systems from a single access point and expands NCDC's popular PC CliServ from an internal NCDC system to World Wide Web access. This project was originally supported by a 1996 Department of Commerce Pioneer Fund grant entitled "An On-Line Access/Retrieval System for Agencies with Large and Diverse Data Bases."

Snow Severity Index Meeting

The National Climatic Data Center (NCDC) hosted a meeting to lay the groundwork for the National Oceanic and Atmospheric Administration's effort to develop a snowstorm severity index for operational use by the Federal Emergency Management Agency (FEMA). The index would be used specifically by FEMA as an objective measure to aid in the distribution of disaster-relief funds pertaining to snow removal. The project's goal and background, possible methodologies, potential FEMA funding, and draft milestones were discussed. NCDC will report to the National Weather Service on the feasibility of this effort within the next two weeks. If determined to be feasible, meetings with FEMA will be held to determine the future course of index development.

CLIMATE DATA AND INFORMATION SERVICES

NOAA-K Archive Test

The National Climatic Data Center (NCDC) participated in a National Environmental Satellite, Data, and Information Services (NESDIS)/National Oceanic and Atmospheric Administration (NOAA)-K product systems test from March 23 to 25 by archiving simulated NOAA-K Level 1b data and metadata with the New Archive System and the IBM 3494 tape library. All data was archived successfully except for Advanced Microwave Sounding Unit-B, which failed quality control checks due to limitations in simulated data.

◆ **Data Base Development**

High Resolution Six Second Upper Air Winds Available

The National Climatic Data Center is producing a high resolution upper air data archive that includes upper air wind components for all reported levels (every six seconds). Data are the output of a redesigned High Resolution Six Second Upper Air Data Acquisition and Processing System and the use of the winds computation software developed at the University Consortium of Atmospheric Research. Data, collected from all operational National Weather Service MicroArt sites, reside on the Hierarchical Data Storage System.

◆ **Data and Information Distribution**

NNDC Server Conceptual Design

The National Oceanic and Atmospheric Administration National Data Center (NNDC) Server team met in Boulder, CO, the last week of March to create a conceptual design, define the

projects necessary to complete that design and lay out the initial datasets and the 1999 budget. Dan Manns, the project leader, and Claude Williams represented the National Climatic Data Center. This system is a collaborative effort between the data centers to build a system which will allow users to search all products and datasets, browse the metadata, browse any related graphics and retrieve online and/or offline data. This system is meant to connect all previous NNDC projects.

NNDC Pilot Project

A final summary report for the Pilot Project has been submitted. The goal of the Pilot Project was to identify areas where the NOAAserver system does not meet the requirements layed out for the National Oceanic and Atmospheric Administration National Data Centers (NNDC), define the methods necessary to resolve those areas, and identify a test bed of datasets from each center.

NEXRAD FoxPro Database

A Next Generation Weather Radar (NEXRAD) FoxPro database has been implemented which contains Level II and III inventories and station history information. The database allows direct entry of Level III disk IDs and begin/end date and time, and reduces the amount of time needed to catalog the disks. Periods when Level II and III data are missing are automatically computed for any selected time range and station and a report for the National Weather Service Regional headquarters can be produced showing for each site the percentage of data received.

AWIPS/NOAAPORT Antenna Installation

Scott Ackland, an engineer and owner of Antek Systems, Inc., visited the National Climatic Data

Center (NCDC) on March 25th to inspect the Advanced Weather Information Processing System (AWIPS) antenna locations. The Government Services Administration building manager, Antek, and NCDC have reached agreement on the final location. Installation of the antenna could provide a working system to NCDC as early as May.

Report on February's Weather Extremes Placed On-line

The National Climatic Data Center (NCDC) has placed a new report on-line regarding the February 1998 flooding in California and tornadoes in Florida. The report includes a narrative, precipitation data, satellite images, Next Generation Weather Radar (NEXRAD) images, a section on historical perspective, and links to other sources of information and data. The report is accessible from NCDC's homepage through the "Weather Events of 1993-1998" page, which links to reports for 33 events from that time period.

National Climatic Data Center Supports North Carolina Science Fair

The National Climatic Data Center (NCDC) will provide International Meteorological Climate Summary CD-ROM's and jacket thermometers as prizes for a North Carolina Science Fair near Raleigh, NC, later this spring. Over 500 projects are expected to be entered at the school or district level with the winners advancing to one of several regional competitions. The Raleigh American Meteorological Society (AMS) chapter provides judges for the competitions. Usually several dozen projects deal with weather, climate, air pollution, or other related topics. The judges recognize the outstanding projects in the atmospheric and oceanographic sciences and present certificates from the national AMS to the elementary, middle, and high school level "winners." Prizes will include contributions in the form of CD-ROM's, subscriptions to the popular "*Weatherwise*" magazine, and jacket thermometers.

Presentation Tailored for the Insurance Industry

Sam McCown of the National Climatic Data Center (NCDC) was the keynote speaker for the March 19 meeting of the Asheville Claims Association. Sam's presentation, "NCDC Services for the Insurance Industry," provided examples of observations, Next Generation Weather Radar (NEXRAD) and satellite imagery, warnings, and NCDC publications pertinent to three major weather events in the western North Carolina area within the past two years. Adjustors attending the conference represented diverse professional interests ranging from the medical profession to the agricultural industry to state government. All found the presentation helpful and were interested in obtaining more information.

Radio Interview

The National Climatic Data Center's Tom Peterson was interviewed on the climate of 1997 and related climate change issues for the weekly program "Earth Beat" on station KITS in San Francisco, CA. The program was aired in San Francisco and Portland, OR.

♦ Research Customer Service Group Requests

Data Used for Stream Flow Analysis Project

A National Weather Service researcher obtained daily climatological data for Delta, CO, covering the 1912-1960 period. The researcher is using the daily river gage data as part of a time series analysis of the flow on the North Fork of the Gunnison River, and to track historical flooding of the river. According to the record, there was extensive flooding on the Gunnison in 1912 and at other times before the Blue Mesa Dam was constructed. The cooperative data will allow the researcher to track the historical impact the dam has had on the river stage data.

Rodents and El Niño?

A researcher at the Department of Biological Sciences, Northern Illinois University, obtained historical monthly rainfall data from the National Climatic Data Center's Global Historical Climate Network Web page. The researcher downloaded time series monthly rainfall data for a variety of sites in Chile for the last 30 years. The researcher is trying to correlate rainfall data with historical El Niño events and rodent populations in Chile.

Martian/Terrestrial Atmospheric Tempests Compared

The National Climatic Data Center supplied copies of the Southern Hemisphere Surface/1000 - 500 MB Thickness Charts for 0000 and 1200 UTC for January 22 - 24, 1998, to the Northeast Regional Climate Center. The Center is researching storms affecting the Martian atmosphere, and has noted storms over Antarctica on those dates with patterns somewhat analogous in appearance to the storms they are studying on Mars. They will use the storms in the Earth's southern hemisphere to help model what they think is occurring in the Martian atmosphere.

♦ **Satellite Data Requests**

Sea Turtle Distribution

Very little is known about the distribution and abundance of endangered sea turtles in the northwestern Atlantic. The turtles seem to respond to sea surface temperatures (SST) by congregating near SST fronts. A study of the effects of SST on the distribution of the turtles will be conducted by the National Marine Fisheries Service. Data for the incidental catch of sea turtles by the U.S. pelagic longline fleet in the Atlantic has been collected, and seasonal and spatial distribution of the turtles from this dataset will be analyzed. The National Climatic Data Center will furnish NOAA-12 and NOAA-14 polar orbiter data for a six-month

period of a section of the Atlantic to assist with the study.

♦ **Requests from News Media**

Gainesville Tornado

On March 23, a deadly tornado struck near Gainesville, GA, during the predawn hours, killing at least 11 people. The storm system moved through Hall County, then northeast across Rabun County and into North Carolina. Within four hours of the tornado touchdown, the National Climatic Data Center (NCDC) was downloading GOES-8 data at 15 minute intervals, and producing colorized imagery for a request from the *Atlanta Journal-Constitution* newspaper. The images and accompanying story were run in the Saturday edition of the newspaper, and also on their website, at:

<http://www.accessatlanta.com/ajc/bigstory/032298/track.html>. This was the fourth deadly tornado disaster to strike the Gainesville/Hall County area this century, more than for any other area in the entire U.S. Other Gainesville disasters included 98 killed on June 1, 1903; 203 killed on April 6, 1936; and 23 killed on April 16, 1944.

NOVA Flairs El Niño Patterns

Full-disk GOES-9 visible images from 2100 UTC March 10, 1996, and 2100 UTC March 10, 1998, were supplied by the National Climatic Data Center (NCDC) to Jennifer Uscher of the popular Public Broadcast Service's "NOVA On-line." The images will be used as input into an interactive game called "Weather Mapping" on the site entitled "Tracking NOVA." Images were chosen to show a snapshot of weather patterns over the entire Pacific Ocean in daylight during an El Niño year and during a year in which El Niño wasn't present. Though hourly images chosen at random do not always reflect characteristic weather patterns of El Niño and Non-El Niño years, these two images were different and representative.

♦ Private Industry Interactions

NOAA and NWS Staff Meet with Energy and Insurance Representatives

The National Climatic Data Center's Michael Crowe, along with several National Weather Service (NWS) staff, met in New York City at the Wills Faber of North American Reinsurance Company Headquarters, with representatives of the energy, insurance, reinsurance and financial sectors to discuss the burgeoning field of weather derivatives and the data that is needed to support it. A derivative is a financial transaction whose value depends, at least in part, upon the value of a related asset or liability. Buying soybean futures is an example. A more specific example of a weather (or climate) derivative would be a contract forged between an energy supplier and an insurance company concerning the severity of a winter (or heating) season. Numerous contracts, valued at many millions of dollars, were made concerning the winter of 1997-98 and they are coming due at the end of March. All parties are interested in the accuracy of data and metadata and the delivery of accurate, timely climate information and were grateful for the responsiveness and guidance given by the National Oceanic and Atmospheric Administration (NOAA). Further discussions and interactions are forthcoming including two conferences planned for April and May.

♦ Interesting Requests

The 2008 Olympics

A consulting meteorologist contacted the National Climatic Data Center (NCDC) to obtain climatological data for the Tampa, FL, area. He has been assigned a project to find the average daily high and low temperature along with average precipitation for several major global metropolitan areas. The periods in question will cover June, early July, late September, and October. The cities in question are all competing to host the 2008

Summer Olympics. The NCDC provided the *Global Daily Summary* CD-ROM for the 1977-1991 period of record.

Watered Down Fuel

An automotive engineer with General Motors contacted the National Climatic Data Center (NCDC) to obtain meteorological data for a study concerning a fuel mixture problem in California which involves water and automotive fuel. Emission requirements for the state of California allow a special gasoline additive (a dehazer) to be added while the fuel is moving through the pipeline to the refinery. This dehazer's main task is to leach any water out of the fuel mix. However, the study has found that this additive may also be absorbing water from the surrounding atmosphere, therefore increasing the amount of water in the fuel mix. NCDC offered hourly temperature and relative humidity data for Los Angeles on diskette for the period in question.

Wintertime Instability Index

Forecasters at the National Weather Service (NWS) in Jackson, KY, are using meteorological data retrieved from the National Climatic Data Center (NCDC) to conduct a case study on the Wintertime Instability Index (WINDEX). WINDEX conditions result when steep low to mid-level lapse rates and low level moisture combine to produce convective snow showers. NCDC provided NWS with surface and upper air charts, satellite images, and numerical model output for December 31, 1997.

♦ Regional Climate Centers

Unified Climate Access Network Activities

As part of the Unified Climate Access Network (UCAN) Project, a presentation was given by several of the Regional Climate Centers to the United States Department of Agriculture (USDA) Weather and Climate Coordinating Committee in Washington, D.C. The presentation outlined

UCAN progress over the past 12 months, UCAN technology, data sets, metadata, future development, and funding needs from USDA. A demonstration of single station data access and distributed access to stations located in different data archives via the Internet and CORBA object programming was given following the presentation.

Support for USDA

The Western Regional Climate Center (WRCC) received a request from the United States Department of Agriculture's (USDA) chief meteorologist to begin supplying the Idaho Agricultural Statistics Service with data and statistics for their weekly publication, "Idaho Crop Weather." Working closely with the Idaho office, WRCC was able to develop a system for providing the information they needed in a format most readily acceptable to their publication system. This high level of cooperation enabled them to publish their first report of the 1998 growing season on time.

El Niño Activities

El Niño presentations were given to the South Carolina Agriculture Commission, Farm Bureau, and South Carolina Contractors Association by the Southeastern Regional Climate Center (SERCC) staff. El Niño precipitation is trailing off at the end of the reporting period. However, South Carolina December 1997-March 1998 rainfall of 24.23 inches was 133 percent of normal (18.28 inches). Other Southeastern states have reported similar figures. In comparison, severe El Niños in 1905-06 and 1982-83 produced 131 percent and 142 percent of normal precipitation over the same period. Diagrams, maps, and tables are available at http://water.dnr.state.sc.us/climate/sercc/el_nino.html.

Maps for "Mapping of El Niño Related Weather Events in South Carolina" were specially created and have been posted on the Web (http://water.dnr.state.sc.us/climate/sercc/el_nino.

[html](http://water.dnr.state.sc.us/climate/sercc/el_nino.html)) by the Southeast Regional Climate Center (SERCC). Southeastern Rain Day data actuals, December 1997-February 1998, were compared to normals and Web mapped, see (<http://water.dnr.state.sc.us/climate/sco/scenso.html>). December 1997-March 1998 southeast rain days are 200-400 percent of normal. Significant increase in heavy rainfall caused construction delays or problems throughout the southeast, especially in Florida and South Carolina. This is the wettest December-March period in the 103 years of continuous record for the southeast. South Carolina contract losses are estimated in the several hundred thousand dollar range. See http://water.dnr.state.sc.us/climate/sercc/el_nino.html for detailed information.

The March 1998 freeze that impacted South Carolina and Georgia peach crops was mapped. Some areas north of Atlanta, GA, suffered as much as 21 straight hours at or below freezing. In northern South Carolina, where most of the southeast peaches are produced, temperatures were even lower than in Georgia for three successive mornings.

New Hourly Database

The Northeast Regional Climate Center continued to refine its new database of hourly surface observations. Several derived elements, such as wet-bulb temperature, relative humidity, and station pressure, were added to the database. Valuable information from the "remarks" section of the METAR code was extracted as well. This information includes wind gusts, 24-hour max and min temperatures, hourly, 6-hour, 12-hour and 24-hour precipitation, snow depth and snow water equivalent.

User Contacts

The Regional Climate Centers report that direct user contacts in March totaled 3,508, resulting in 1,432 orders. Requests serviced by their on-line systems numbered 9,685.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

◆ Climate and Global Change

Climate Change Impacts Workshop

The National Climatic Data Center's (NCDC) Michael Crowe attended the Gulf Coast Regional Climate Change Workshop and Public Forum in Baton Rouge, LA, February 25-27. This forum was one of twenty workshops initiated by Vice President Gore and sponsored by the U.S. Global Change Research Program during 1997-98. These fora are contributing toward an integrated assessment of regional, national and global climate change and its potential consequences and impacts. Mr. Crowe gave an invited lecture on observed global, national and regional trends of temperature and precipitation. The Gulf Coast Region and the state of Louisiana in particular are very much concerned with potential sea level rise in the 21st century and the concurrent sinking of the land mass of the Mississippi delta. Significant impacts include the destruction of wetlands, coastal shorelines, estuaries and fisheries and the overall degradation of the quality of water resources.

◆ Working Groups/ Committees/Meetings

NOAA Virtual Data system (NVDS) Working Group Meeting

Steve Evans and John Fauerbach, of the National Climatic Data Center, attended the joint National Oceanic and Atmospheric Administration (NOAA) National Data Centers (NNDC) Information Technology Security Seminar and an NVDS Project Planning Meeting at the National Oceanographic Data Center in Silver Spring, MD. The NNDC sessions brought together the Computer Security Officers from each of the Data

Centers for the first time to address common security standards and practices. Speakers from NOAA, the National Environmental Satellite, Data, and Information Services (NESDIS), the National Security Agency, and other computer security contractors and business representatives provided valuable information. A set of security recommendations is being drafted for implementation across the data centers. Discussions also addressed preparation for the upcoming NOAA/NESDIS Security Reviews scheduled for April and May at each of the NNDCs.

Paper Accepted for International Workshop on Atmospheric Icing of Structures (IWAIS)

A paper by Neal Lott of the National Climatic Data Center and Kathy Jones of the U.S. Army Cold Regions Research and Engineering Laboratory has been accepted and will be presented at the June 1998 IWAIS conference in Reykjavik, Iceland. The paper is entitled "Using U.S. Weather Data in Modeling Ice Loads from Freezing Rain." The paper presents the lessons learned in an ongoing project to model freezing rain and ice loads for all of the U.S.

Customer Order Management Processing System (COMPS)

An upgraded version of the System Administration module of COMPS was delivered to Data Centers during March. This software will allow Data Center personnel to begin population of the Product Catalog tables. COMPS team members worked with On-Line Credit Card team members and Metadata team members to determine a common Product Numbering schema.

Participation in 2nd Symposium on Urban Environments

The National Climatic Data Center's Kevin Gallo has been asked to organize a session on the "urban contamination of temperature records" for this American Meteorological Society sponsored Symposium, which will be held in conjunction with the 23rd Conference on Agricultural and Forest Meteorology and the 13th Conference on Biometeorology and Aerobiology in Albuquerque, NM, November 2-7, 1998.

♦ **Visitors**

Crop Assessments Using AVHRR Data

Dr. John Turner, from the U.S. Department of Agriculture's (USDA) Foreign Agricultural Service, visited with National Climatic Data Center (NCDC) personnel on the possibility of expanding Local Area Coverage (LAC) over several cereal crop growing regions around the world. NCDC's Satellite Services Branch in Suitland, MD, has been processing and shipping near real-time Advanced Very High Resolution Radiometer (AVHRR) LAC data on a weekly basis for many years. The USDA is NCDC's largest customer, with over four thousand data sets processed annually. The USDA processes the raw satellite data into vegetation indices, which help to assess and predict crop harvests around the world.

♦ **Publications**

Weather and Climate Extremes

The U.S. Army Corps of Engineers Topographic Engineering Center has published a new 100-page book titled "Weather and Climate Extremes" by P. Krause and K. Flood. It is a continent-by-continent study of the most extreme occurrences ever recorded for various climatic elements from peak gusts of a few seconds duration to annual precipitation. National Climatic Data Center data are used throughout.

International Journal Publishes Article

A paper titled "Evaluation of the Normalized Difference Vegetation Index (NDVI) and Sensor Zenith Angle Values Associated with the Global Land Advanced Very High Resolution Radiometer (AVHRR) 1-km Data Set" by Kevin Gallo of the National Climatic Data Center, and A. Huang, of the University of North Carolina, Asheville, has been published in the International Journal of Remote Sensing (Vol. 19: 527-533). The paper includes a comparison of the sensor view angles and NDVI values of the global 1-km set to the National Oceanic and Atmospheric Administration/National Aeronautics and Space Administration Pathfinder AVHRR global data set over a 12-month interval. The results indicated that the sensor view angles of the two data sets varied considerably, however, the NDVI values were quite similar.

Papers Presented

Kevin Gallo and Tim Owen of the National Climatic Data Center (NCDC) presented two papers at the Annual Meeting of the Association of American Geographers, Boston, MA, March 25-29. In a special session on Remote Sensing of Land Use/Cover, Kevin Gallo presented a paper (Tim Owen co-author) on "Urban/Rural Designation of Climate Observation Stations with Remotely Sensed Data." In a special session on Urban Climatology/Urban Heat Islands, Tim Owen presented a paper (Kevin Gallo co-author) on "A Comparative Analysis of Urban-Rural Land Surface Characteristic Differences and *In Situ* Temperature Observations."

Paper Accepted

A paper entitled: "Global Historical Climatology Network (GHCN) Quality Control of Monthly Temperature," co-authored by the National Climatic Data Center's Thomas C. Peterson, with Russell S. Vose, Richard Schmoyer, and Vyachevslav Razuvaev, has officially been accepted for publication by the International

Journal of Climatology. GHCN is the baseline data set of land surface observations, which is being used for global and regional climate change research.

♦ Interactions with NOAA Line Offices

Rawinsonde Replacement System Project

The National Climatic Data Center (NCDC) Design Team for the data management aspects of the National Weather Service's (NWS) Rawinsonde Replacement System has been established. The team will be led by the Systems Development Staff, and consists of members from each Division. A preliminary meeting with the NWS staff is scheduled for mid-April. Funding for the NCDC effort was received from the NWS.

National Climatic Data Center Provides Surface and Upper Air Charts

The National Climatic Data Center provided surface and upper air charts from the National Oceanic and Atmospheric Administration (NOAA) Weather Charts CD-ROM series for several recent

months to NOAA's Meteorology, Turbulence and Diffusion Branch in Oak Ridge, TN. The researchers there are involved in a NOAA collaboration with the U.S. Air Force regarding the testing of models that handle emergency responses for rocket accidents. Part of this work includes background meteorology for the experimental periods, and the charts will be used in these studies.

Observing Site Metadata

The National Climatic Data Center (NCDC) and the Hurricane Research Division of AOML are cooperating in the augmentation of routine station information for coastal and inland stations that are subject to hurricanes. Photos are taken of the area surrounding the stations to help document station wind exposure and identify obstacles that could reduce the winds at the site. During tropical cyclone episodes, anemometer site documentation information will make it possible for the Hurricane Research Division and the National Hurricane Center meteorologists to correct wind observations for the influence of upstream roughness elements. These photos and other information will be contained on a web page at NCDC.

EMPLOYEE ACTIVITIES

Personnel Resources

Dr. Snodgrass Retires

Dr. Rex J. Snodgrass, Chief, Systems Development Staff at the National Climatic Data Center (NCDC) announced his retirement effective April 3, 1998. His career spanned over 28 years, and included work at the National Bureau of Standards, Center Director for the National Oceanic and Atmospheric's Environmental Sciences Information Center, and NCDC Deputy Director.

Wayne Faas has been named the Acting Chief of Systems Development.

♦ **Training**

Seminar for New Managers

Pam Hughes, of the National Climatic Data Center, attended the Office of Personnel Management sponsored two-week training "Seminar for New Managers" held at the Eastern Management Development Center in Lancaster,

PA. The seminar provides an opportunity to learn and practice managerial skills needed to effectively meet the current and future challenges of Public Service. Major topics included: Organizational Behavior, Performance Management, Situational Leadership, Ethical Values, and Conflict Resolution Management.

Software Training

Roger Winchell and Alan Hall of the National Climatic Data Center attended two days of training sponsored by the National Environmental Satellite, Data, and Information Services on a software package, CASPER 2000, a Year 2000 assessment and partial remediation tool. It was installed and tested using two application software systems slated for the UNISYS Software Migration Project.

Crystal Report Training

Ten National Climatic Data Center (NCDC)

employees attended a 2-day Crystal Report training session offered in-house March 12-13. The training will be used for generating reports for the Customer Order Management Processing System (COMPS) and from other relational data bases such as Oracle and FoxPro.

IBM Course Attended

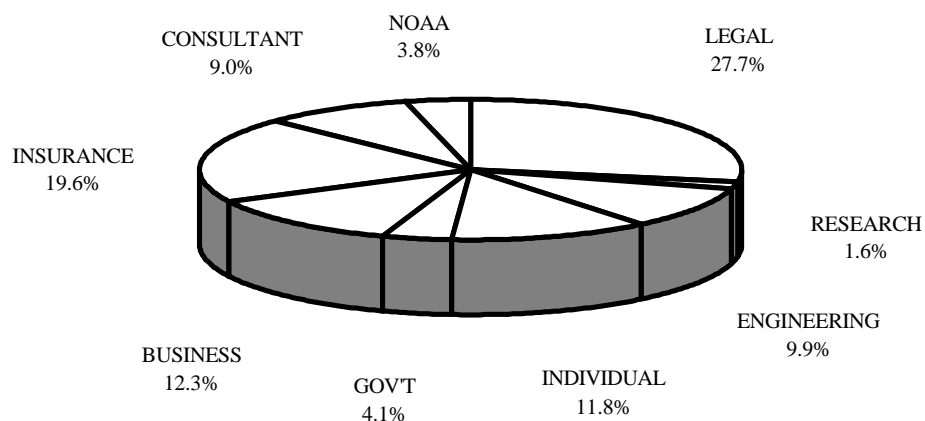
Jeannette Rivera, of the National Climatic Data Center, attended an IBM course in TCP/IP given in Washington, D.C. during the period of March 23-27.

SCEP University Agreements

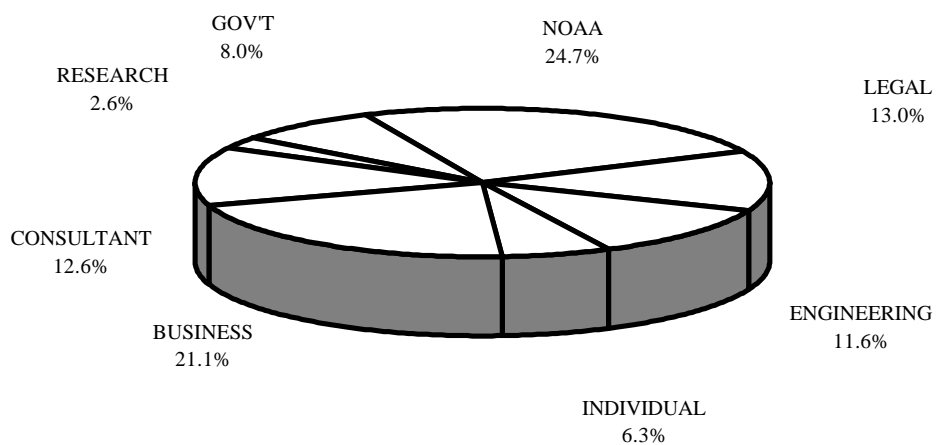
The National Climatic Data Center (NCDC) is in the process of forging agreements concerning the Student Career Experience Program (SCEP) with Northern Illinois University and the University of Wisconsin at Madison. These agreements are needed in order to hire SCEP-candidate students from these universities to work at NCDC.

The following charts and graphs show the latest National Climatic Data Center user and data statistics.

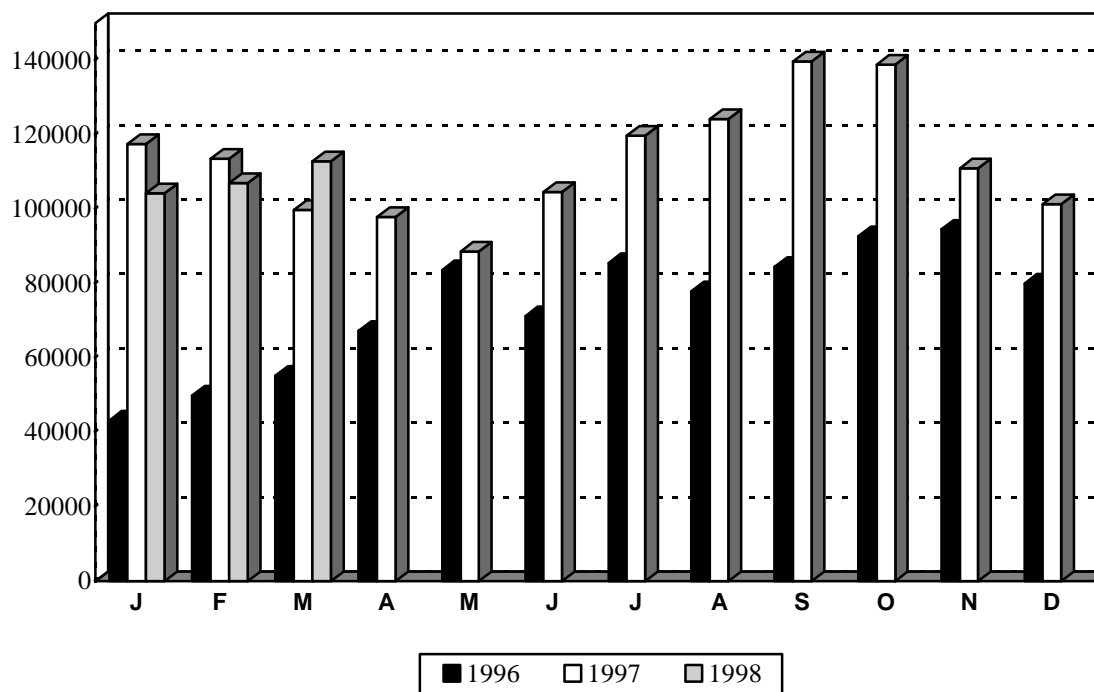
Customer Profile Based on Orders



Customer Profile Based on Order Cost



NCDC On-Line Users



NCDC Off-Line Customer Contacts

